PACIFIC NORTHWEST WATERWAYS ASSOCIATION

Benefits of the Columbia-Snake River System

River Navigation

- The Columbia-Snake River System is part of a national transportation system. It provides both economic and environmental benefits.

- It is a unified transportation system with 36 deep and shallow water ports.

- A 40-foot deep river channel for ocean-going vessels extends 106 miles from the ocean to Portland and Vancouver, Washington. 1999 waterborne cargo value totaled $13 billion.

- 34% of all U.S. wheat exports were shipped on the Columbia River in 1999. In the 1998-99 crop year, 50% of that wheat arrived at the export terminal by barge.

- A 14-foot shallow-draft channel extends 359 miles from Vancouver to Lewiston, Idaho, accommodating tugs, barges, and log rafts, worth nearly $2 billion.

- Columbia-Snake River barge shippers save $38 million annually over the cost of transporting their cargoes by either rail or truck.

- An additional 120,000 rail cars or 700,000 semi-trucks would be needed annually if barge navigation were stopped.

- Navigation is fuel-efficient. A ton of commodity goods can move 524 miles by barge on one gallon of fuel, compared to 202 miles by rail and 59 miles by truck.

- Navigation is the cleanest mode of transportation, with 1/4 to 1/3 the emissions of rail and 1/20 to 1/9 the emissions of trucking, per ton-mile.

- The impact on the Portland metro area includes 60,000 jobs; $723 million in revenues; and $54 million in taxes.

- One of many examples of impacts on smaller areas would be Lewiston/Clarkston with water-related benefits that include 1,580 jobs and $35.6 million in revenues.

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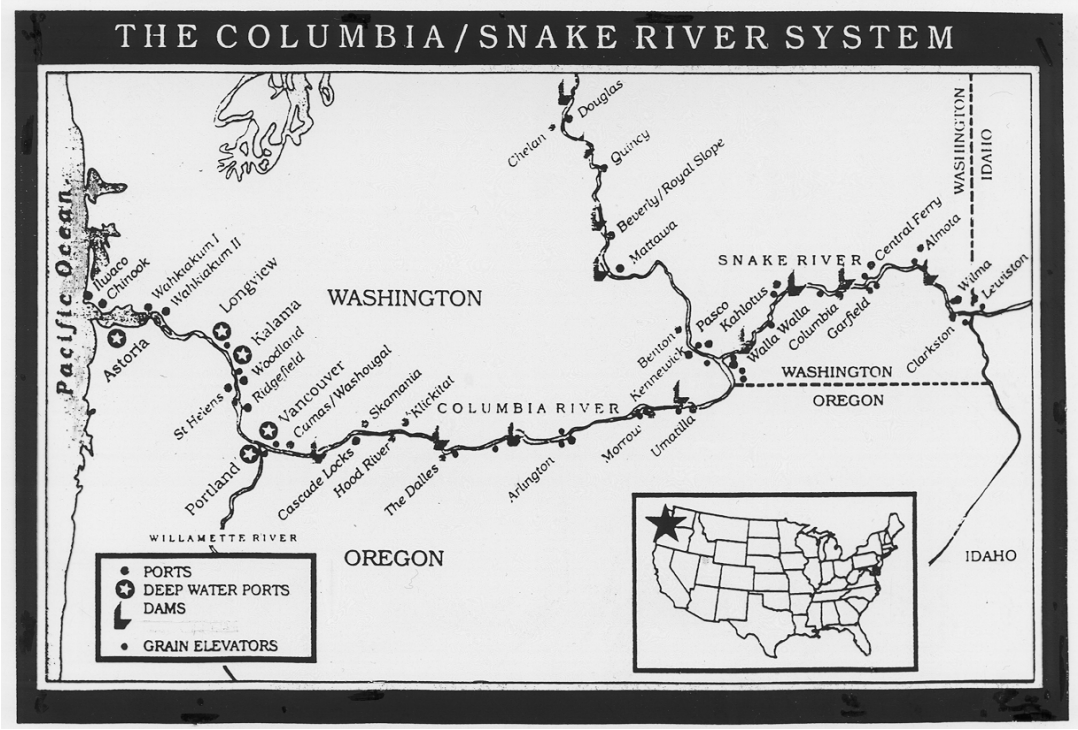
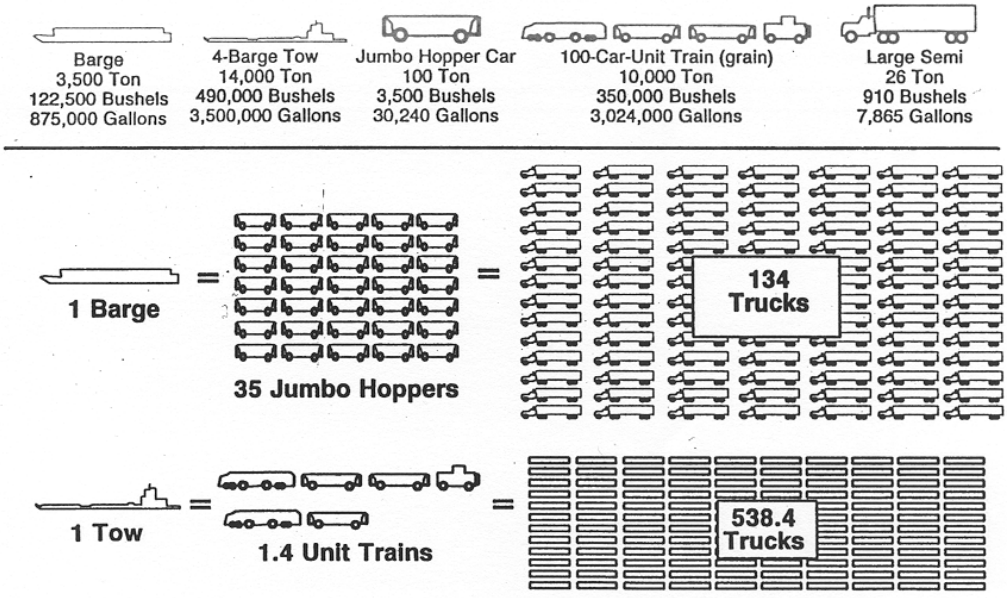


Comparing Columbia/Snake River Barge, Truck and Rail



One panamax vessel = 60,000 tons of grain = 4-5 barge tows = 600 rail cars = 2,400 semi trucks = 6 miles of trains = 95 miles of trucks on the highways (at 150 feet between trucks)

Benefits of the Columbia-Snake River System

Hydropower

- The Bonneville Power Administration markets power from 30 federal hydroelectric projects on the Columbia and the Snake Rivers.

- BPA's 15,000-mile electrical power transmission grid is connected with Canada, California, Utah, Montana, Wyoming and Nevada.

- Hydroelectric dams on the Columbia and Snake Rivers provide over 75 percent of BPA's electricity.

- BPA pays over $700 million per year to the U. S. Treasury.

- Cost-effective electricity rates are a major factor in the Northwest in attracting and keeping industry.

- Northwest hydropower costs $10 per megawatt hour to produce, compared to nuclear, $60; coal, $45; and natural gas, $30.

- Northwest power produces revenue that supports fish and wildlife, conservation and renewables, and other social programs. For example, salmon mitigation efforts cost approximately $435 million per year.

- Hydropower is a renewable resource because it consumes no fossil fuels, is pollution free, with zero emissions. All other feasible replacement resources will contribute to air, water and land pollution as well as global warming concerns.

- BPA's 8550 MWs of firm power keeps 28.3 metric tons of CO2 out of the air. This is equal to taking 5.7 million cars off the road.

- Only hydropower has the instantaneous capability to meet peak demand, and provide power that can be a matter of life and death under some circumstances. For example, in the February, 1989 cold spell, hydropower provided energy to heat homes that was not available from other sources.

- Other public and private utilities have hydropower facilities that contribute to the Northwest energy mix. Nearly 70% of the entire energy produced in the Northwest comes from hydropower. These same utilities and their customers contribute to salmon recovery efforts in addition to the $435 million per year contributed by BPA.

- Hydropower is the nation's leading renewable resource. Nearly 12% of the nation's energy mix is renewable and 90% of that is hydropower.

Benefits of the Columbia-Snake River System

Irrigated Agriculture

- Irrigated agriculture is the economic powerhouse of the west. The net value of irrigated agriculture to all western states is $60 billion.

- Only 6% of the average annual flow of the Columbia/Snake River System is utilized annually to irrigate over 6.5 million acres of land.

- Idaho has the most irrigated acreage in the Northwest with 3.3 million acres, while Washington and Oregon irrigate 1.6 million acres each.

- Net earned income from agricultural production in the three Northwest states exceeds $8 billion annually.

- Food processing in the Northwest adds another $6 billion in sales value, just for fruits, vegetables and specialty products.

- Food processing is the largest manufacturing employment sector in the state of Idaho and the second largest in both Washington and Oregon.

- Northwest exports of irrigated agricultural products total $1.4 billion annually.

- The net direct value to the economy of one-acre foot of water, when used for irrigation, is $40 to $70 per acre-foot. The Columbia Basin Project alone supplies about 2.6 million-acre feet per year.

- Adversely, the 1994 Flow Augmentation used 11 million acre-feet. Water used for flow augmentation is not available for irrigation use or hydropower production.

- Irrigation projects create wildlife habitat as well as recreation opportunities. The Columbia Basin Project alone created 500,000 acres of wetlands, wildlife habitat and lakes. Fishing, camping and hunting are major recreational benefits.

- Increased efficiency in irrigation has decreased water use 10 to 25% per acre in the last 10 years.

- Northwest states are the leading U.S. producers of apples, potatoes, raspberries, blackberries, asparagus, currants, hops, lentils, concord grapes, sweet cherries, spearmint and peppermint oil, pears, sweet corn, and frozen peas. All of these crops are grown on irrigated land.

Benefits of the Columbia-Snake River System

Recreation

- Reservoirs, hydroprojects and adjacent shorelines offer both, land and water recreation activities including fishing, water-skiing, boating, rafting, windsurfing, and swimming. Other related activities include picnicking, camping, hiking and sight seeing.

- Project owners have developed boat launch ramps, beaches, marinas and other facilities to support this key Northwest industry that are used extensively. For example:

    - There are 33 recreational sites developed at the four lower Snake River dams alone. Approximately 2 million visitors use these facilities each year.

    - The Bureau of Reclamation boasts that more than 450,000 tourists come to the Grand Coulee Dam Visitor's Center each year.

Flood Control

- Flood control is often compared to insurance. Until you lose something, you do not appreciate how important it is. In 1948, the importance of flood control became a priority after Vanport, Oregon was destroyed by a flood. The Army Corps of Engineers responded by developing a multiple-use reservoir storage plan for the Columbia River Basin.

- In February 1996 the region was reminded of the importance of flood control. Government agencies and non-federal hydro operators worked together to reduce flood damage by an estimated 3.2 billion dollars.